1. (Currently amended) A process for extraction of zinc and lead from a material containing one or more iron oxides, zinc oxide and lead oxide, said process comprising:

(a) heating a composite body of said material and a carbonaceous material in a reduction zone containing a reducing atmosphere at a temperature insufficient to effect melting of the iron in the material at a temperature and for a time sufficient to form a reductant from said carbonaceous material and to reduce a predetermined amount of the zinc oxide to zinc vapour, and reduce predetermined amounts of said iron oxides and lead oxides to iron and lead, respectively;

(b) collecting said zinc vapour from said reduction zone and cooling it to form liquefied or solid zinc;

(c) further heating the material remaining, after said zinc vapour has been collected from said reduction zone, to a temperature sufficient to effect melting of the iron and lead therein; and

(d) separately recovering molten iron and separately recovering molten lead therefrom.

2. (Previously presented) A process according to claim 1, further comprising:

(e) controlling said zinc vapour to substantially prevent or minimise its premature recondensation.

3. (Previously presented) A process according to claim 2, wherein said controlling step is performed to substantially prevent or minimise its premature recondensation includes

providing gas flow in said reduction zone arranged to drive said zinc vapour away from said reduction zone.

4. (Previously presented) A process according to claim 3, wherein said gas flow in said reduction zone is provided generally downwardly and said vapour is driven by said gas flow laterally from the reduction zone.

5. (Cancelled).

6. (Previously presented) A process according to claim 1, wherein at least one of waste heat or heated gases resulting from step (c) are utilised in said formation of said zinc vapour.

7. (Previously presented) A process according to claim 1, further comprising providing a predetermined fluxing agent whereby to form a basic slag in step (c) and to encourage desulphurization reactions.

8. (Previously presented) A process according to claim 1, wherein steps (a) and (c) are carried out in separate furnace chambers.

9. (Cancelled).

10. (Previously presented) A process according to claim 1, wherein the material containing one or more iron oxides and zinc oxide is electric arc furnace (EAF) dust.

11. (Previously presented) A process according to claim 1, wherein said carbonaceous material is finely divided brown coal or peat.

12. (Previously presented) A process according to claim 1, further comprising forming said composite body by mixing a carbonaceous material with the material containing one or more iron oxides and zinc oxide to produce a cohesive mass, and compacting the cohesive mass to produce the composite body.

13. (Previously presented) A process according to claim 1, wherein said composite body is a pellet.

14. (Previously presented) A process according to claim 13 when appended to claim 12, further comprising forming said pellet by extrusion of the cohesive mass.

15. (Previously presented) A process according to claim 1, wherein the amount of carbonaceous material in said composite body is such that, when combusted in said heating step or steps, the carbonaceous material provides at least sufficient heat for its carbonisation and for reduction of the zinc and iron oxides and, if recovered, lead oxide, in said material containing one or more iron oxides and zinc oxide.

16. (Previously presented) A process according to claim 1, wherein step (a) is conducted in a furnace chamber.

17. (Currently amended) Apparatus for extraction of zinc and lead from a material containing one or more iron oxides, zinc oxide and lead oxide, comprising:

a first furnace chamber for receiving composite bodies that include said material and a carbonaceous material, wherein the first furnace chamber defines a reduction zone in which said composite bodies may be heated at a temperature insufficient to effect melting of the iron in the material but at a temperature and for a time sufficient to form a reductant from said carbonaceous material and to reduce a predetermined amount of the zinc oxide to zinc vapour, and reduce predetermined amounts of said iron oxides and lead oxides to iron and lead, respectively;

a first arrangement comprising an outlet from the first furnace chamber which is structured ~~configured~~ to collect said zinc vapour from the first furnace chamber by flow of the zinc vapour into the outlet;

a second arrangement comprising a condensing arrangement in communication with said outlet and structured ~~configured~~ to receive said collected zinc vapour and to cool ~~for cooling~~ the vapour therein to form liquefied or solid zinc;

a second furnace chamber in communication with said first furnace chamber to receive therefrom material remaining after said zinc vapour has been collected from the first furnace chamber;

a heating arrangement configured to further heat the remaining material in the second furnace chamber to a temperature sufficient to effect melting of the iron and lead therein; and

a third arrangement configured to separately recover the molten iron and separately recover the molten lead therefrom.

18. (Previously presented) Apparatus according to claim 17, further comprising a fourth arrangement configured to control said zinc vapour to substantially prevent or minimise its premature recondensation.

19. (Previously presented) Apparatus according to claim 18, wherein said fourth arrangement includes a further arrangement associated with said first furnace chamber whereby said zinc vapour is driven away from said reduction zone.

20. (Previously presented) Apparatus according to claim 19, wherein said gas flow in said reduction zone is provided generally downwardly and said zinc vapour is driven by said gas flow laterally for the reduction zone.

21. (Cancelled).

22. (Previously presented) Apparatus according to claim 17, wherein said first and second furnace chambers are arranged so that waste heat and/or heated gases from

said further heating are utilised in formation of said zinc vapour in the first furnace chamber.

23. (Previously presented) Apparatus according to claim 18, further comprising:

a fifth arrangement configured to tap slag from said second furnace chamber.

24. (Previously presented) Apparatus according to claim 17, wherein said third arrangement is configured to tap molten lead from said second furnace chamber.

25. (Previously presented) Apparatus according to claim 17, wherein said second furnace chamber is vertically below the first furnace chamber such that said reduced material is continuously fed into the second furnace chamber under gravity.

26. (Previously presented) Apparatus according to claim 17, wherein said heating arrangement is an external electrical heating arrangement.

27. (Previously presented) Apparatus according to claim 17, wherein said first furnace chamber defining a cooling zone comprises a zinc vapour condenser in communication with an outlet from said reducing zone comprising a zinc vapour collecting arrangement.

28. (Previously presented) Apparatus according to claim 27, wherein said condenser includes a zinc splash condenser.

29. (Previously presented) Apparatus according to claim 27, wherein said condenser includes a main condenser chamber having an inlet for receiving zinc vapour positioned above the base of the main condenser chamber such that condensed zinc does not pass back into the furnace chamber.

30. (Previously presented) Apparatus according to claim 27, wherein said main condenser chamber surrounds a vapour conduit, the open end of which forms the vapour inlet, extending from said outlet from the reduction zone to a region of the condenser above its base.

31. (Previously presented) Apparatus according to claim 27, wherein a vapour conduit extends in a lateral direction from the furnace outlet into an upper region of the condenser chamber.

32. (Previously presented) Apparatus according to claim 17, further comprising:

a thermally insulated casing defining said first furnace chamber therein;

one or more columns provided within said first furnace chamber, each column comprising a plurality of vertically orientated, vertically spaced, heat resistant tubes, wherein the cross-sectional area of each tube is smaller than that of an adjacent, lower tube, and wherein the ends of adjacent tubes are arranged so as to provide an annular space therebetween;

an inlet through which a combustible charge is fed into the uppermost tube;

an outlet from which reacted charge is removed from the lowermost tube; and

a fluid conduit for conveying combustible volatiles evolved by heating said charge to a gas burning means for combustion, to thereby provide heat to said first furnace chamber.

33. (Previously presented) Apparatus for extraction of zinc from a material containing one or more iron oxides and zinc oxide, comprising:

a first furnace chamber for receiving composite bodies that include said material and a carbonaceous material, wherein the first furnace chamber defines a reduction zone in which said composite bodies may be heated at a temperature insufficient to effect melting of the iron in the material but at a temperature and for a time sufficient to form a reductant from said carbonaceous material and to reduce a predetermined amount of the zinc oxide to zinc vapour;

a first arrangement configured to collect said zinc vapour from the first furnace chamber;

a second arrangement configured to receive said collected zinc vapour for cooling the vapour to form liquefied or solid zinc;

a thermally insulated casing defining said first furnace chamber therein;

one or more columns provided within said first furnace chamber, each column comprising a plurality of vertically orientated, vertically spaced, heat resistant tubes, wherein the cross-sectional area of each tube is smaller than that of an adjacent, lower tube, and wherein the ends of adjacent tubes are arranged so as to provide an annular space therebetween;

an inlet through which a combustible charge is fed into the uppermost tube;

an outlet from which reacted charge is removed from the lowermost tube; and

a fluid conduit for conveying combustible volatiles evolved by heating said charge to a gas burning means for combustion, to thereby provide heat to said first furnace chamber.